

## Operating Instructions

Video Cassette Recorder

# NV-SD230A

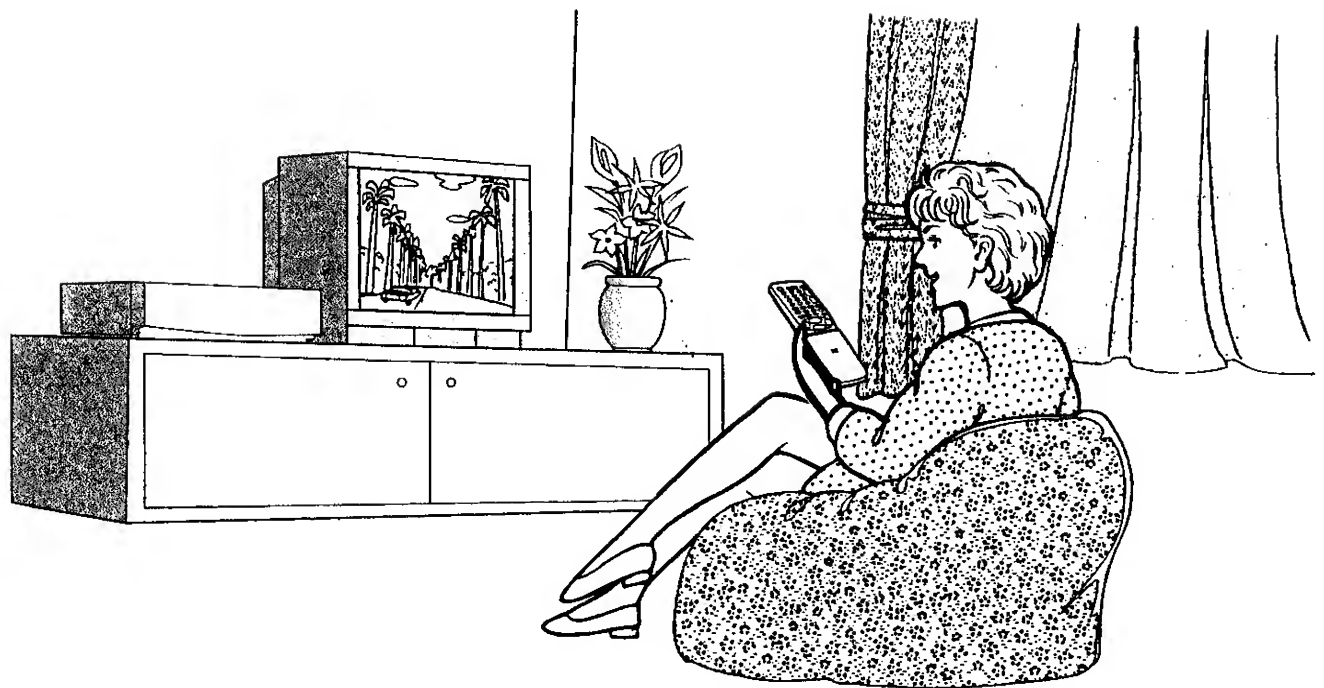


***SUPER DRIVE***

# ***Dear Customer***

Thank you for purchasing this Panasonic Video Cassette Recorder.

We strongly suggest that you carefully study the Operating Instructions before attempting to operate the VCR, and that you note the listed precautions.





# Contents

As this equipment gets hot during use, operate it in well ventilated place; do not install this equipment in a confined space such as a book case or similar unit.

## FOR YOUR SAFETY

### ■ DO NOT REMOVE OUTER COVER.

To prevent electric shock, do not remove cover.  
No user serviceable parts inside. Refer servicing to qualified service personnel.

### WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

### IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

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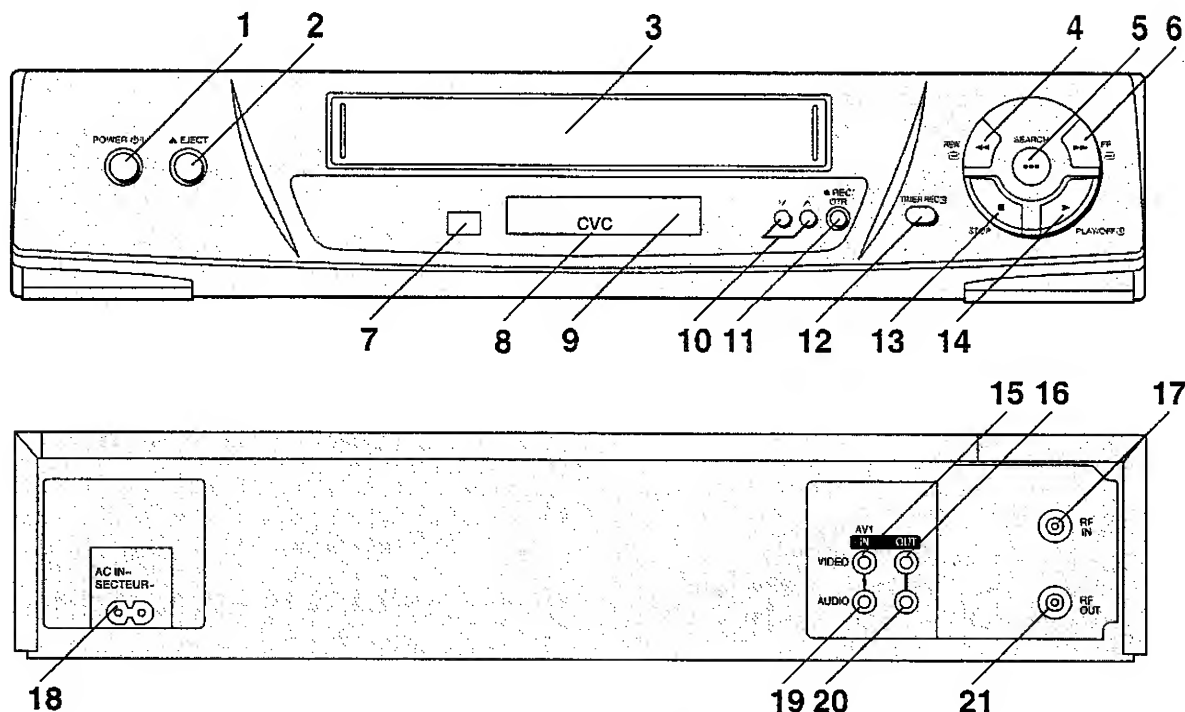
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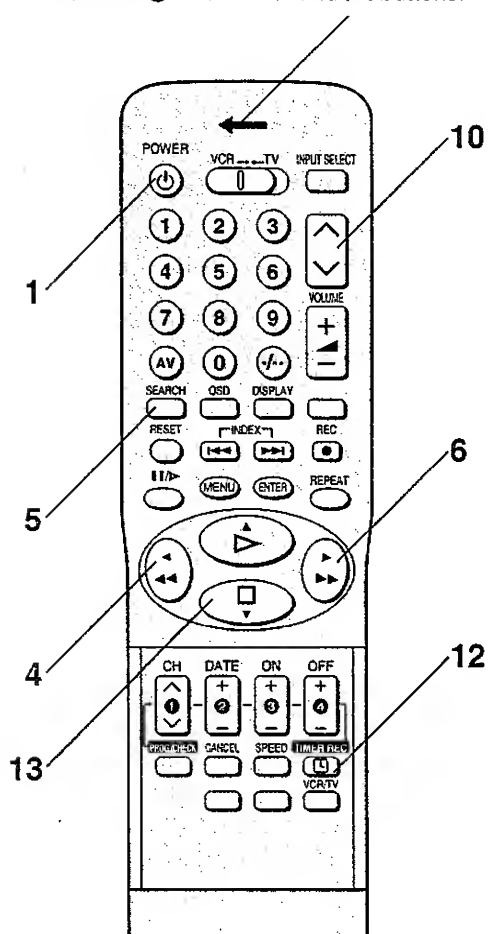
Specifications .....	Back Cover
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# Controls and Connection Sockets

This section describes in detail the function of each button, switch and connection socket.



Set VCR/TV switch to VCR for using POWER and the and buttons.



## FRONT

### 1 POWER (POWER )

Press to switch the VCR from on to standby mode or vice versa. In standby mode, the VCR is still connected to the mains.

Set VCR/TV switch to VCR for using POWER of remote controller.

### 2 EJECT

Ejects a video cassette.

### 3 Cassette Compartment

Insert a video cassette here.

### 4 REW (REWIND)

In the stop mode:	Rewinds the tape.
In the playback mode:	Searches back.
In the rewind mode:	Obtains high speed picture.

"<<" is lit.

### 5 SEARCH

Searches a recorded programme using the intro-jet scan functions.

### 6 FF (FAST FORWARD)

In the stop mode:	Fast forwards the tape.
In the playback mode:	Searches forward.
In the fast forward mode:	Obtains high speed picture.

">>" is lit.



## 7 Infra-red Remote Control Receiver Window

### 8 CVC (Crystal View Control) Indicator

This indicator is lit when the VCR is on.



### 9 Display

#### 10



Selects the required programme position (TV station) of the VCR.

For tracking adjustment and vertical locking adjustment.



- For manual tracking adjustment



The  and  buttons are used to adjust the tracking when, for example, noise bars on the picture during normal playback are better removed manually than by automatic digital tracking control. To return to automatic digital tracking control, press both buttons together.

- For slow tracking adjustment

When noise bars appear during still or slow playback, switch over to slow playback and adjust with the  or  button to reduce the noise bars.

- For vertical locking adjustment

Use the  and  buttons to minimize any vertical jitter during still picture playback.

Set **VCR/TV** switch to **VCR** for using the  and  buttons of remote controller.


#### 11 **REC/OTR**

Starts recording.

For One-Touch Recording (OTR).

#### 12 **TIMER REC**

Turns the timer recording function on and off.

 is lit or not lit.


Once you operate the timer recording function, normal VCR operation is not possible unless you press this button again and release the VCR from the timer recording standby mode.

#### 13 **STOP**

Stops playback or recording.

Ejects the video cassette.

#### 14 **PLAY/OFF**

Starts playback. "" is lit.

For the repeat playback function.

For the Play-Off Timer function.

## REAR

### 15 VIDEO IN

Connects a video cable from a movie camera or another unit.

### 16 VIDEO OUT

Connects a video cable to a TV or another unit.

### 17 RF IN

Connects the external aerial.

### 18 AC IN~

Connects the main power supply.

### 19 AUDIO IN

Connects an audio cable from a movie camera or another unit.

### 20 AUDIO OUT

Connects an audio cable to a TV or another unit.

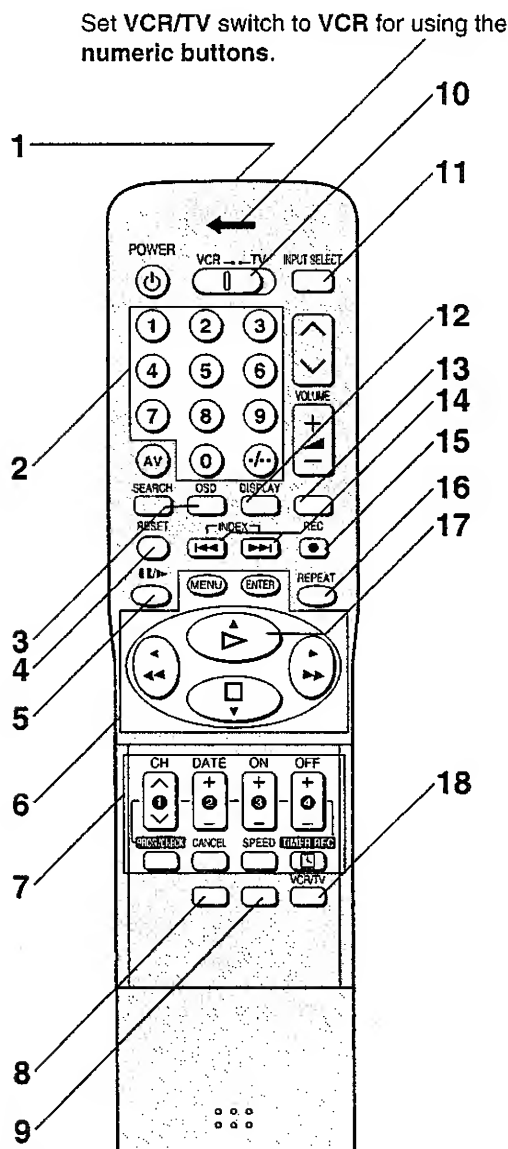
### 21 RF OUT

Connects the aerial terminal on a TV.

# Infra-red Remote Controller

The remote control unit for this VCR is a universal remote controller. As such, some of its buttons are not used to operate this VCR.

## VCR OPERATION



### 1 Infra-red Transmitter

### 2 Numeric Buttons

Selects programme positions (1-99) of the VCR.  
 • Ensure that VCR/TV switch is set to VCR.

9: 9

19: 1 → 9

### 3 OSD

For the On Screen Display Function.

### 4 RESET

Resets the tape counter (elapsed time) to "0:00.00".  
 • The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

### 5 II/II> (PAUSE/SLOW)

During playback:  
 • By pressing: Still picture. "II" is lit.  
 • By pressing for 2 seconds or more: Slow playback. "II>" is lit.  
 During recording: Interrupts recording.

### 6 On Screen Display Menu Operation Buttons

**MENU:**  
 Makes the on screen display main menu appear on the TV screen.

**ENTER:**  
 Confirms the selection, or stores.

**▲ ▼ ◀ ▶:**  
 Makes selections from the on screen display.  
 • These buttons can also be used for playback, stop, rewind and fast forward mode.

### 7 Timer Recording Operation Buttons

**CH, DATE, ON, OFF:**  
 Programmes a timer recording.

**PROG./CHECK:**  
 Sets and checks timer programmes.

**CANCEL:**  
 Cancels the settings made for timer recording.

**SPEED:**  
 Selects the desired tape speed for recording.  
 SP gives the best picture quality.  
 LP (EP) gives the longest recording time.  
 • The indicator (SP, LP or EP) corresponding to the selected tape speed now appears on the VCR display or on screen display.  
 LP: This appears when PAL/MESECAM signals are input or output.  
 EP: This appears when NTSC signals are input or output.

**TIMER REC [ ]:**  
 Turns the timer recording function on and off.  
 [ ] is lit or not lit.  
 Once you operate the timer recording function, normal VCR operation is not possible unless you press this button again and release the VCR from the timer recording standby mode.

8 No function.  
 This button is not used to operate this VCR.

9 No function.  
 This button is not used to operate this VCR.

### 10 VCR/TV switch

VCR: Selects the VCR operation mode.  
 TV: Selects the TV operation mode.

# 11 INPUT SELECT

Selects the AV external recording source.

# 12 DISPLAY

Changes the indication on the VCR display or on screen display as follows.

→Clock→Counter→Remaining Tape Time

# 13 No function.

This button is not used to operate this VCR.

# 14 INDEX ◀◀, ▶▶

Used for the index search function.

# 15 REC ●

Starts recording.

# 16 REPEAT

For the repeat playback function.

# 17 ▷ (PLAY)

Starts playback. "▷" is lit.




For the repeat playback function.

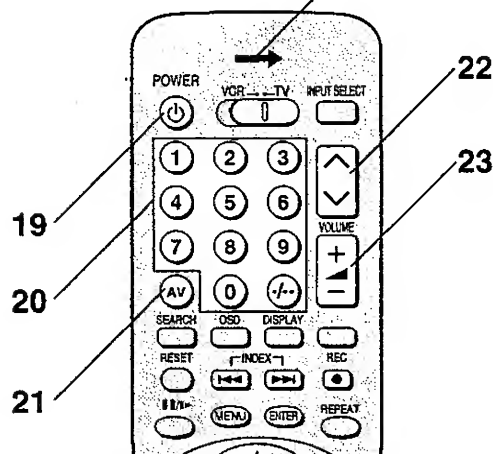
# 18 VCR/TV

No function.

This button is not used to operate this VCR.



## TV OPERATION

Set VCR/TV switch to TV for using POWER , the  and  buttons and the numeric buttons.



## 19 POWER

Press to switch the TV from on to standby mode or vice versa. In standby mode, the TV is still connected to the mains.

- With some TV models, it may only be possible to switch the TV to the standby mode using this button. In this case, use AV or the  and  buttons to switch the TV on.
- Ensure that VCR/TV switch is set to TV.

## 20 Numeric Buttons

Selects programme positions (1–99) of the TV.

- Ensure that VCR/TV switch is set to TV.

## 21 AV

Selects TV input.

## 22

Selects the required programme position (TV station) of the TV.

- Ensure that VCR/TV switch is set to TV.

## 23 VOLUME

Adjusts the volume of the TV.

## Using for Operation of your TV

Only Panasonic televisions can be operated with the provided remote controller.

The settings for operating the TV with the remote controller have already been made.  
No additional settings need to be performed.

## Note:

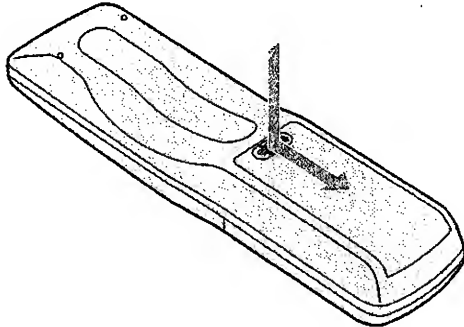
Some Panasonic televisions cannot be operated using this remote controller.



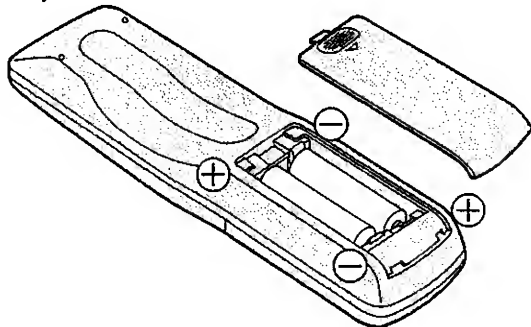
# Remote Controller Setup

## Installing the Batteries

- 1 To remove the cover, slide it in the direction of the arrow while pressing down.



- 2 Load the batteries with their polarity (+ and -) aligned correctly.



- 3 Slide the cover back on.

### Power Source for the Remote Controller

The remote controller is powered by 2 "AA", "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

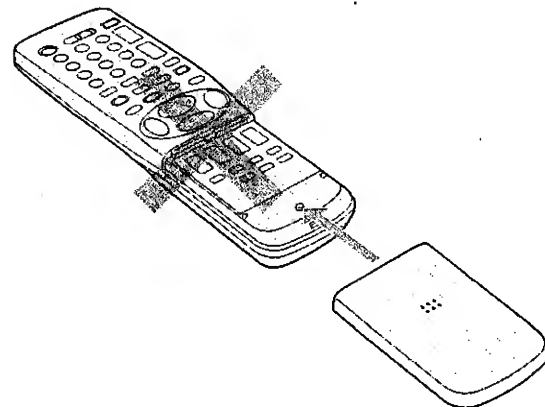
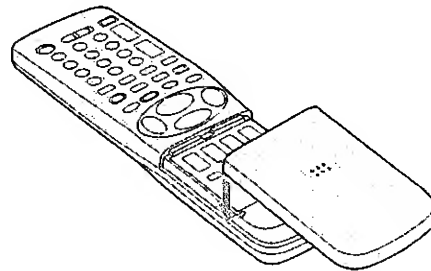
### Precautions for Battery Replacement

- Load the new batteries with their polarity (+ and -) aligned correctly.
- Do not apply heat to the batteries, or an internal short circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.
- Do not use rechargeable batteries.

## If the Sliding Cover of the Remote Controller becomes Detached

If the sliding cover of remote controller becomes detached by mistake, fit it securely in place by putting it on top of the remote controller and pushing it down until it clicks into position, as shown in the figure below.

- It is not possible to fit the sliding cover in place by pushing it from the bottom end of the remote controller. Do not attempt to do this.



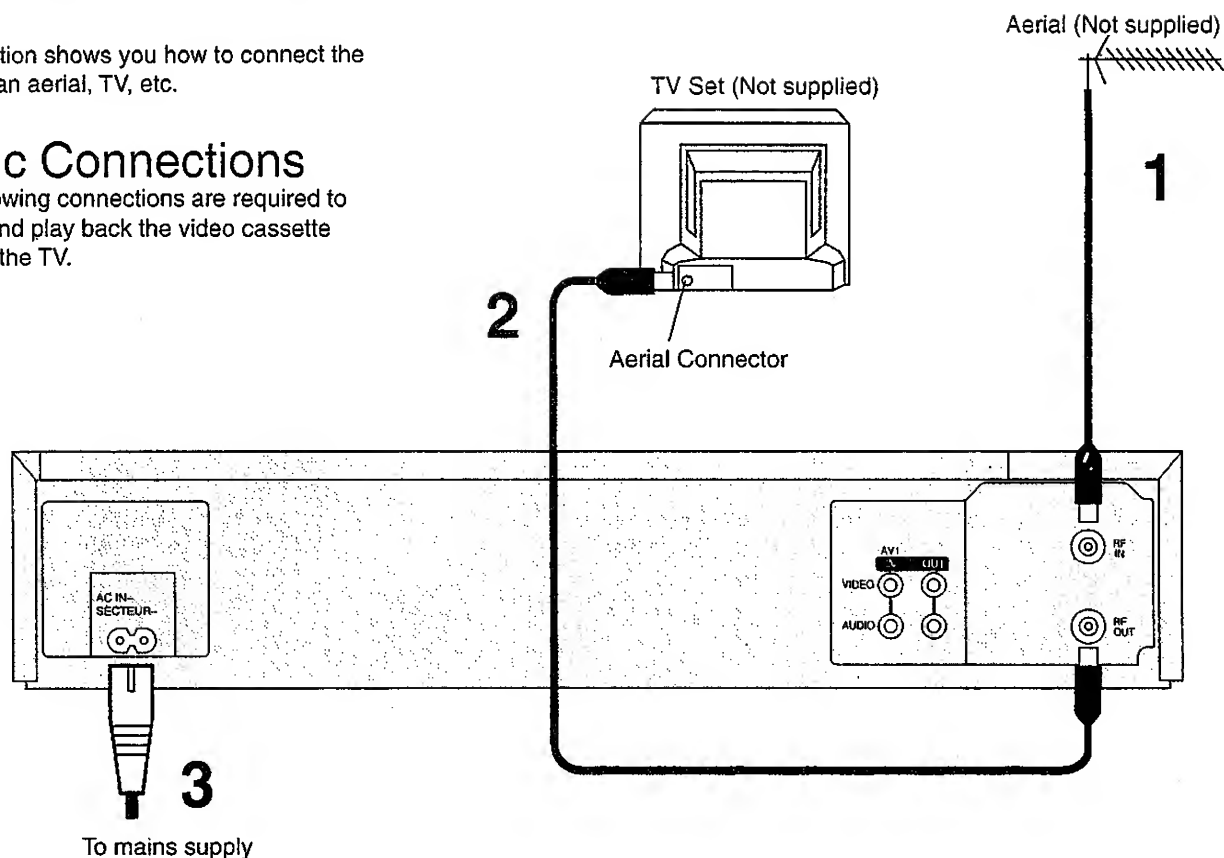


# Connections

This section shows you how to connect the VCR to an aerial, TV, etc.

## Basic Connections

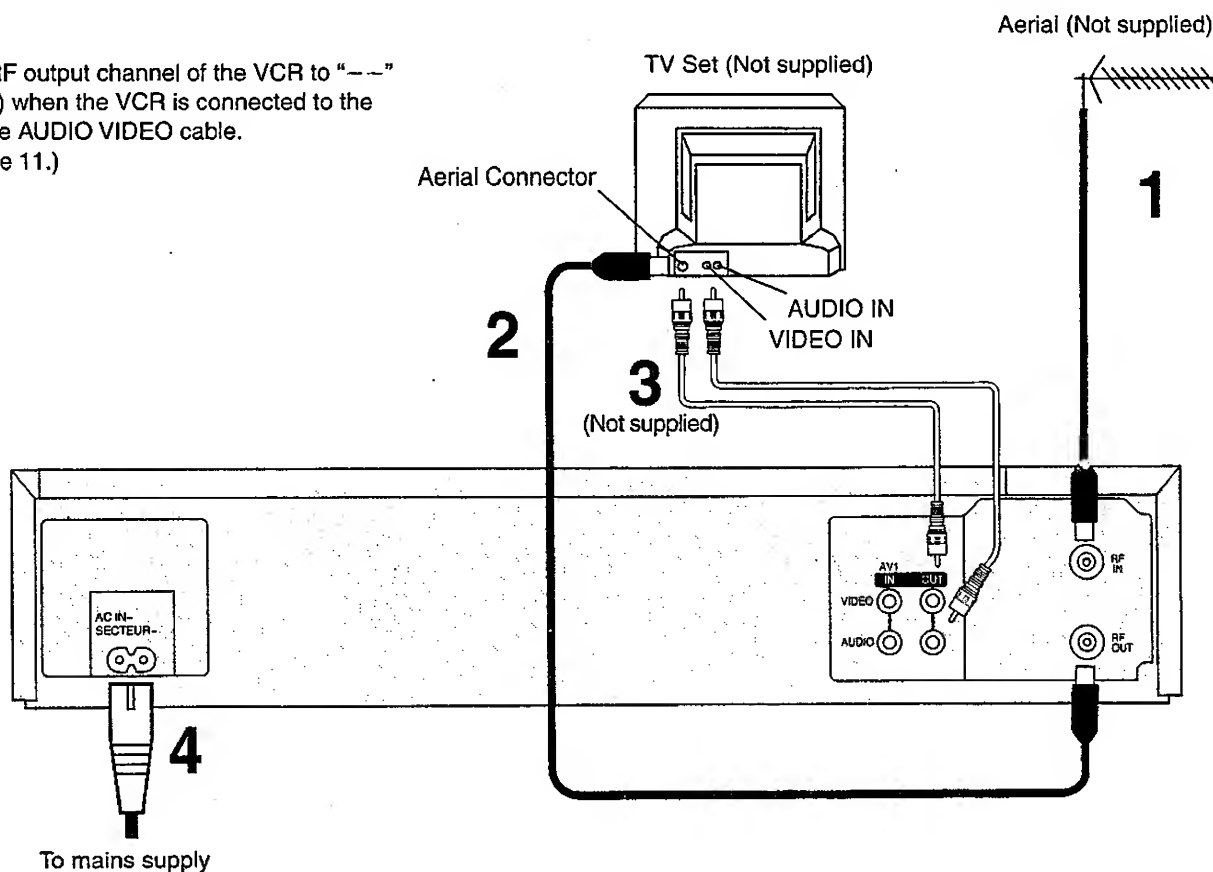
The following connections are required to record and play back the video cassette through the TV.



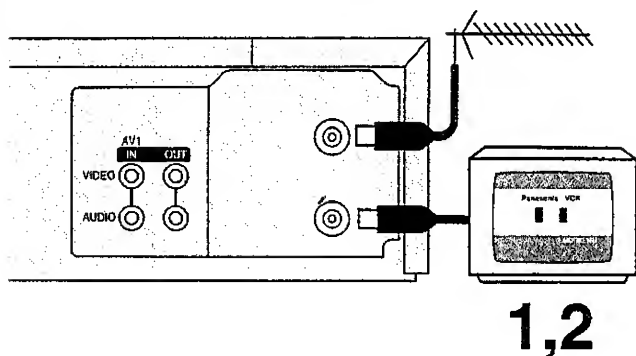
Setting Up

## Connection to a TV using the Audio/Video Input Sockets

Set the RF output channel of the VCR to "—" (RF OFF) when the VCR is connected to the TV via the AUDIO VIDEO cable. (See page 11.)



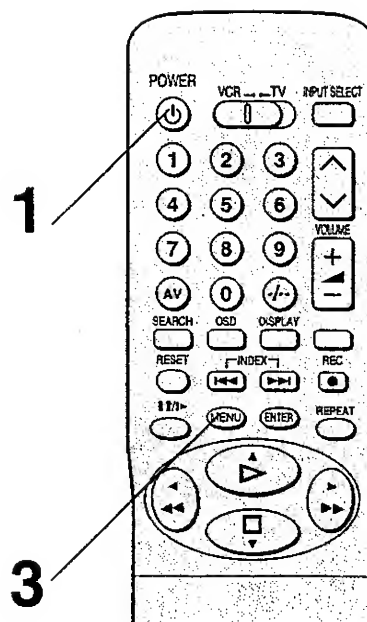
# Tuning the TV to your VCR



The VCR supplies a signal to the TV via the RF coaxial cable on channel AU 28-69.

It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VCR to the TV through the video and audio input sockets, then you do not need to follow the procedure below.



## Operations

**1**

POWER



Turn on the TV and the VCR.

**2**



Set the TV to an unused position which you wish to use for your video playback.

- Tune the TV until the TV programme screen appears.  
(Please refer to the TV manufacturers operating instructions regarding tuning.)

**3**

MENU

Press **MENU**.

## How to Change the RF output Channel (using the remote controller)

In some rare cases after tuning the TV to your VCR, interference may be visible on the picture. To get rid of this interference, you can manually adjust the RF output channel a few channels up and down from the current setting. The procedure is described below.

### Operations

- 1 Hold down **MENU** for 5 seconds or more.
  - The VCR display changes as shown below and the VCR picture on the TV displays this pattern.

#### Display Symbol

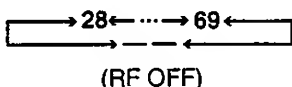


Example



- 2 Enter the desired channel number (AU 28-69) by using the **numeric buttons** or the **▼** and **▲** buttons.

- Ensure that **VCR/TV** switch is set to **VCR**.
  - Set the RF output channel of the VCR to "—" (RF OFF) when the VCR is connected to the TV via the **AUDIO VIDEO** cable.
- Press the **▼** and **▲** buttons to display "—".



Example:

28: (F) → (2) → (8)



- 3 Press **MENU** to finish the setting mode.



- 4 Retune your TV to the new RF channel for the VCR.

### Note:

Even if the RF output channel has been changed, it is not necessary to perform the TV station search.

## How to Change the RF output Channel for New Zealand

### Operations

- 1 Hold down **MENU** for 5 seconds or more.



- 2 Press **▷ (PLAY)** to make **ON** appears on the VCR display.
  - The VCR display changes as shown below and the VCR picture on the TV displays this pattern.

#### Display Symbol

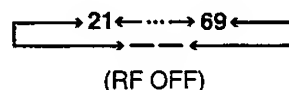


Example



- 3 Enter the desired channel number (21-69) by using the **numeric buttons** or the **▼** and **▲** buttons.

- Ensure that **VCR/TV** switch is set to **VCR**.
  - Set the RF output channel of the VCR to "—" (RF OFF) when the VCR is connected to the TV via the **AUDIO VIDEO** cable.
- Press the **▼** and **▲** buttons to display "—".



Example:

21: (F) → (2) → (1)



- 4 Press **MENU** to finish the setting mode.



- 5 Retune your TV to the new RF channel for the VCR.

### Note:

Even if the RF output channel has been changed, it is not necessary to perform the TV station search.

# Storing TV Broadcasts in your VCR

The VCR is fitted with its own tuner (just like a normal TV) and can be preset to receive up to 99 TV broadcast stations.

## Pre-programmed TV Channels

The local TV broadcast channels 2, 7, 9, 10 and 28 are factory-preset in this VCR.

That is, if you can receive television broadcasts on VHF channels 2, 7, 9, 10 and UHF channel 28, these are already tuned on the programme positions with the matching numbers. However, it is possible to cancel these settings and tune the local TV broadcast channels to any desired programme position.

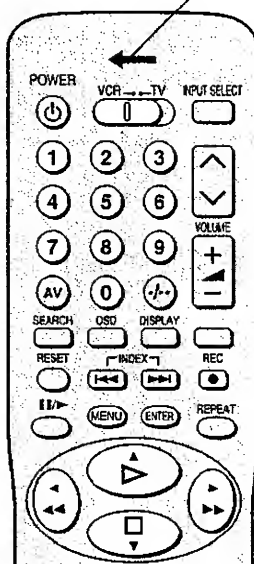
For alternative settings and tuning of additional TV broadcast channels, follow the Tuning Operations.

## Auto Tuning Using the On Screen Display

### Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR and select any programme position except AV.

Set the VCR/TV switch to VCR for using the numeric buttons.



### Operations On Screen Display

<p><b>1</b></p> <p>(MENU)</p>		<p>Press <b>MENU</b>.</p>
<p><b>2</b></p> <p>(Right Arrow) → (ENTER)</p> <p>(Left Arrow) ← (Down Arrow)</p>		<p>Select <b>TUNER PRESET</b>.</p>
<p><b>3</b></p> <p>(Right Arrow) → (Left Arrow)</p> <p>(Left Arrow) ← (Down Arrow)</p>		<p>Select <b>AUTO TUNE</b> and press ◀ or ▶.</p>
		<p>• When Auto Tuning is completed, the on screen display disappears and programme position 1 is selected.</p>
		<p>The number displayed here is the number of channels still to be auto tuned.</p>

### Notes:

- Auto Tuning searches for TV stations from VHF minimum to UHF maximum and memorizes every tuned programme position. Other programme positions are skipped.
- Auto Tuning takes seven or more minutes to complete its search.
- If the VCR is not correctly tuned by Auto Tuning, follow the procedure on the next page.

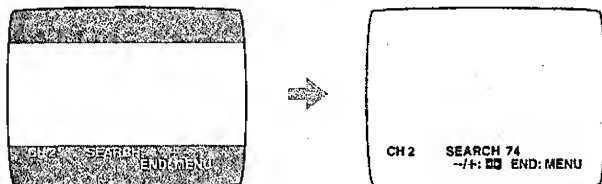
### Channels that can be Received

VHF	CATV	UHF
0-12	45-470MHz	28-69

## Manual Tuning Procedure

- 1 Press **MENU**.
- 2 Select **TUNER PRESET** by pressing **▲** or **▼** and **ENTER**.
- 3 Select **CH** by pressing **▲** or **▼** then select the channel number you want tuned by pressing **◀** or **▶**.
- 4 Confirm that **CLEAR** is set to **OFF**.
- 5 Select **SEARCH** by pressing **▲** or **▼** then press **◀** or **▶**.

### On Screen Display



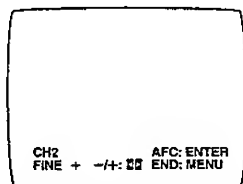
- 6 If the desired TV station has not been tuned, press **◀** or **▶** again.
  - Press **MENU** and repeat steps 3–5 for each programme position you want to tune to a station.
  - To exit, press **MENU** three times.

## Direct Tuning

- 1 Repeat steps 1–4 in **Manual Tuning**.
- 2 Select **SEARCH** by pressing **▲** or **▼**.
- 3 Using the **numeric buttons** on the remote controller (Ensure that **VCR/TV** switch is set to **VCR**.), enter the same number as the number of the channel to be tuned. For the 5A and 9A channels, input the following numbers: 90 for CH-5A, 91 for CH-9A.
  - For other channels that require tuning, repeat steps 3–4 in **Manual Tuning** and steps 2–3 above.
  - To exit, press **MENU** twice.

## Fine Tuning Procedure

- 1 Press **MENU**.
- 2 Select **TUNER PRESET** by pressing **▲** or **▼** and **ENTER**.
- 3 Select **CH** by pressing **▲** or **▼** then select the programme position by pressing **◀** or **▶**.
- 4 Select **FINE** by pressing **▲** or **▼**.
- 5 Press **◀** or **▶** to obtain the best tuning condition.



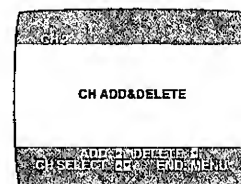
- To return the tuning to its former state, press **ENTER**.
- 6 Press **MENU**.

## Blanking of Unused Programme Positions

- 1 Press **MENU**.
- 2 Select **TUNER PRESET** by pressing **▲** or **▼** and **ENTER**.
- 3 Select **CH** by pressing **▲** or **▼** then select the programme position by pressing **◀** or **▶**.
- 4 Select **CLEAR** by pressing **▲** or **▼**.
- 5 Select **ON** by pressing **◀** or **▶**.
  - Repeat steps 3–5 for other unused programme positions to skip during the selection of programme positions.
  - To cancel the blanking of a programme position, select that programme position then select **CLEAR OFF**.
- 6 Press **MENU** twice.

## CH ADD&DELETE

- 1 Press **MENU**.
- 2 Select **CH ADD&DELETE** by pressing **▲** or **▼** and **ENTER**.
- 3 Select **CH** by pressing **▲** or **▼** then select **ADD** or **DELETE** by pressing **▶** or **◀**.



### Before Adding

POS	CH
1	2
2	4
3	6
4	8
5	10
6	12
7	-
8	-

### After Adding

POS	CH
1	2
2	4
3	-
4	6
5	8
6	10
7	12
8	-

Added CH  
SHIFT ↓

### Before Deleting

POS	CH
1	2
2	4
3	6
4	8
5	10
6	12
7	-
8	-

### After Deleting

POS	CH
1	2
2	4
3	8
4	10
5	12
6	-
7	-
8	-

Deleted CH

SHIFT ↑

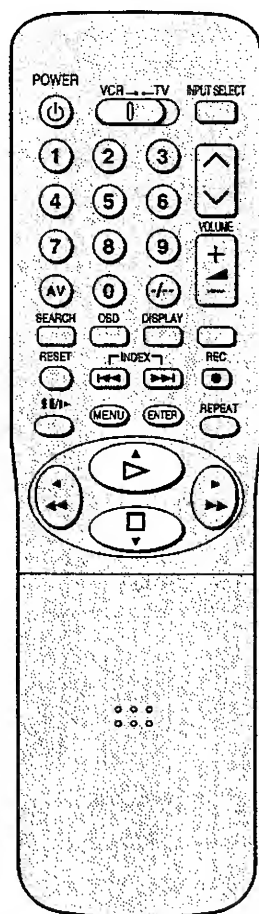
- Adding **CH** shifts the programme positions up, and deleting **CH** shifts them down, as shown in the table above.
  - After adding, Tune the added **CH**. (See steps 3–5 in **Manual Tuning**.)
  - Press **MENU** (for adding only) and repeat step 3 for each of the other programme positions.
- 4 Press **MENU** several times.

Setting Up

# Language Setting of the On Screen Display

## Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



## To Select the Desired Language

Select one of the two languages displayed: English and Russian.

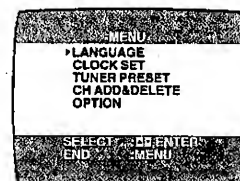
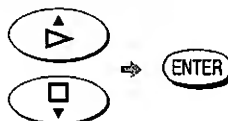
- 1 Press MENU.



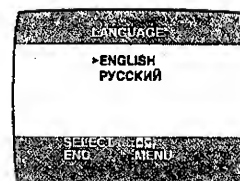
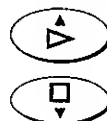
### On Screen Display



- 2 Select LANGUAGE.



- 3 Select the desired language.



- 4 Press MENU twice.



### Note:

The menu screen has a blue background. However, if there is no signal input while AV is selected, the menu screen may change to black and white when MENU is pressed. This does not indicate a malfunction. If it happens, either input a signal or select another programme position.

# Setting the Clock of your VCR

The built-in digital clock is used to activate the timer for automatic recording and must be set to the correct time. It employs the 24-hour system.

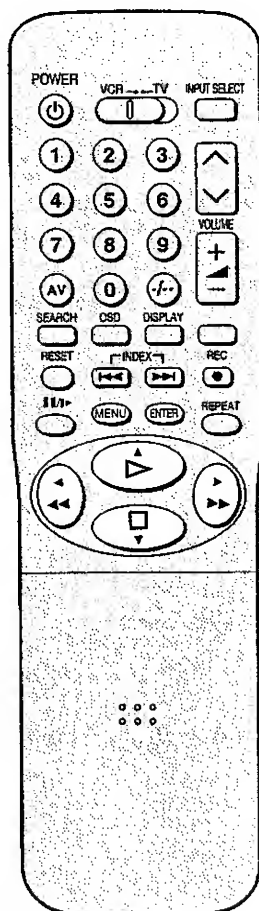
## Example:

Date; 16 October, 1999

Time; 20:15

## Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



## Time Reset Function

If the clock is less than two minutes slow or fast, it can easily be reset to the proper time.

### Example:

Resetting the clock to 12:00.00

- 1 Select **CLOCK SET** from the OSD menu and press **ENTER**.
- 2 When the current clock display on the VCR is between 11:58.00 and 12:01.59, press **MENU** as soon as you hear the 12:00.00 signal. This resets the time to 12:00.00.

## Operations On Screen Display

1

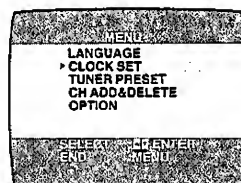


Press **MENU**.

2



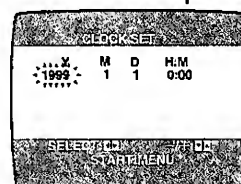
ENTER



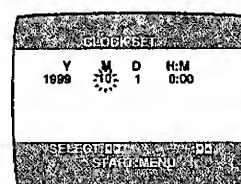
Select **CLOCK SET**.

3

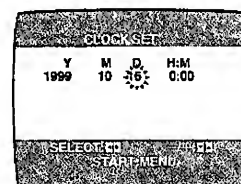
Set each item by pressing **▲** or **▼** and **▶**.  
Press **◀** to return to the previous item.



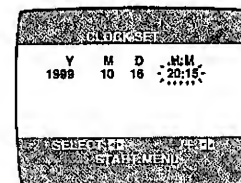
Set Year to "1999".



Set Month to "10".



Set Date to "16".



Set Time to "20:15".

- When it is kept pressed, the indication changes in 30-minute steps.
- There is no need to press **▶**.

4



## Display Symbol



Press **MENU**.

- The clock starts.

## Note:

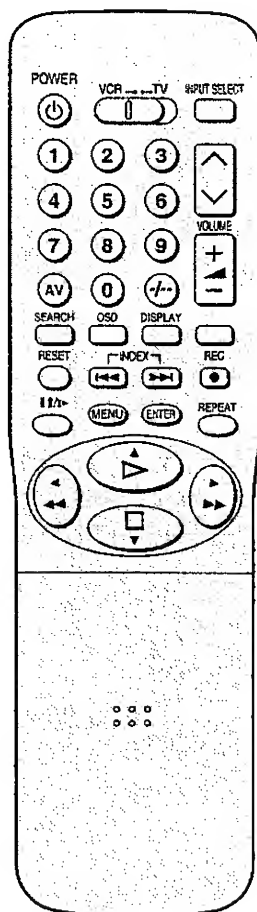
The clock will operate for at least 1 year in total after it has been set, — in the event of a power failure, it will operate on its backup system. After 1 year, it will only operate for 1 hour on its backup system.

Setting Up

# Settings Using the On Screen Display

## Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



## ① Programme position

## ② Tape running display

Stop, Eject	
Rewind, Review	◀◀
Fast forward, Cue	▶▶
Playback	▶
Still playback	
Recording	●
Recording pause	●
Slow playback	1▶
Repeat playback	R▶

## ③ Present time/Tape counter/Remaining tape time/OTR Indication/Dew/Index search/Play-Off Timer

Information	Display
Present time	17:24
Tape counter	-2:35.47
Remaining tape time	REMAIN 2:34
OTR indication	OTR 60
Dew	DEW
Index search	S 01
Play-Off Timer	OFF □ 60

## ④ Tape speed indicator (SP/LP/EP)

## ⑤ Cassette-in indicator

### Note:

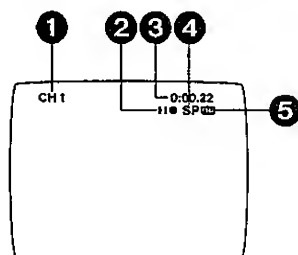
The on screen display may be disturbed or disappear during special playback.

## On Screen Display

1 Press OSD.



### On Screen Display



2 Press **OSD** again to make the on screen display disappear.





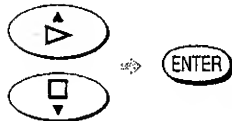
## Option Setting

To Select the Corresponding Video Cassette Tape Length to Display the Approximate Remaining Tape Time (TAPE SELECT)

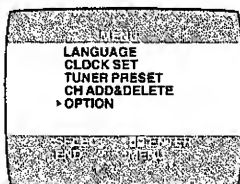
1 Press MENU.



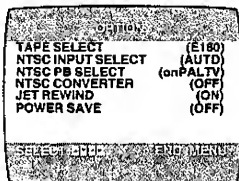
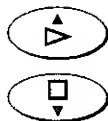
2 Select OPTION.



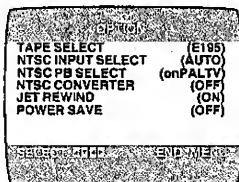
On Screen Display



3 Select TAPE SELECT.



4 Select the corresponding video cassette tape length.



E180: For E30, -60, -90, -120, -150 and -180 tapes.

E195: For E195 tape.

E240: For E240 tape.

E260: For E260 and -300 tapes.

- The remaining tape time may not be displayed correctly depending on the tape used.

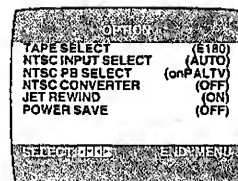
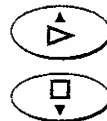
5 Press MENU twice to make the on screen display disappear.



## NTSC INPUT SELECT

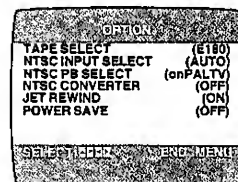
Follow steps 1 to 2 of TAPE SELECT.

3 Select NTSC INPUT SELECT.



4 Select AUTO.

Allows NTSC 4.43 or 3.58 signals to be distinguished automatically.



- Normally set at this position. If the tape has not recorded correctly, select 4.43 or 3.58.

4.43: When recording NTSC 4.43 signals from an external signal source.

3.58: When recording NTSC 3.58 signals from an external signal source.

Some programmes on NTSC 3.58 system cannot be recorded correctly at this position.

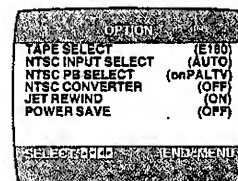
5 Press MENU twice to make the on screen display disappear.



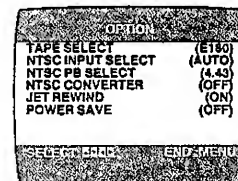
## NTSC PB SELECT

Follow steps 1 to 2 of TAPE SELECT.

3 Select NTSC PB SELECT.



4 Select the desired position according to the colour TV system of the TV.



on PAL TV: For TVs that can receive PAL signals.

4.43: For TVs that can receive NTSC 4.43 signals.

3.58: For TVs that can receive NTSC 3.58 signals.

5 Press MENU twice to make the on screen display disappear.



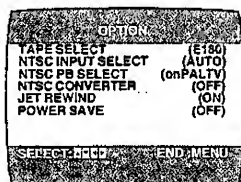
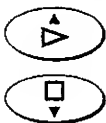
Setting Up

## NTSC CONVERTER

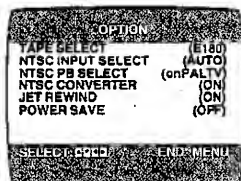
When playing a NTSC game connected to this VCR via a PAL system TV, set **NTSC CONVERTER** to **ON**.

Follow steps 1 to 2 of **TAPE SELECT**.

3 Select **NTSC CONVERTER**.



4 Select **ON** or **OFF**.



**OFF:** Normally set at this position.

**ON:** PAL TV can receive signals from NTSC 3.58 signal source (e.g., NTSC game machines.) connected to the VCR main unit. However, when recording, this function does not work.

- When receiving NTSC 4.43 signals, this function does not work correctly.

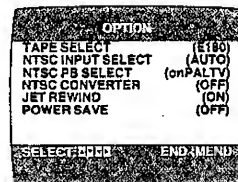
5 Press **MENU** twice to make the on screen display disappear.



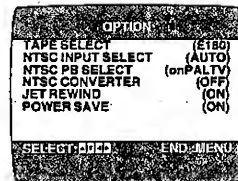
## POWER SAVE

Follow steps 1 to 2 of **TAPE SELECT**.

3 Select **POWER SAVE**.



4 Select **ON** or **OFF**.



**ON:** This setting makes the display disappear when the VCR is off.

It will not operate in the Timer standby mode.

After recording all programmed data, the VCR will go into Power save mode.

**OFF:** This setting does not conserve power when the VCR is off.

5 Press **MENU** twice to make the on screen display disappear.

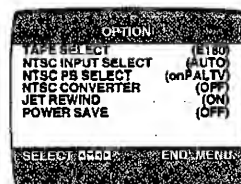


## JET REWIND

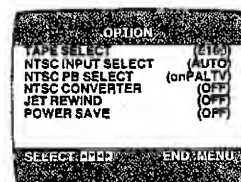
This function enables the tape to rewind at the 360 times speed.

Follow steps 1 to 2 of **TAPE SELECT**.

3 Select **JET REWIND**.



4 Select **ON** or **OFF**.

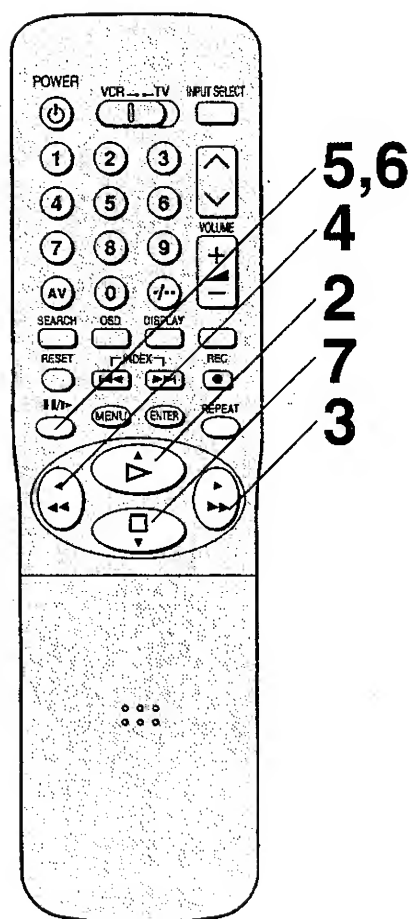
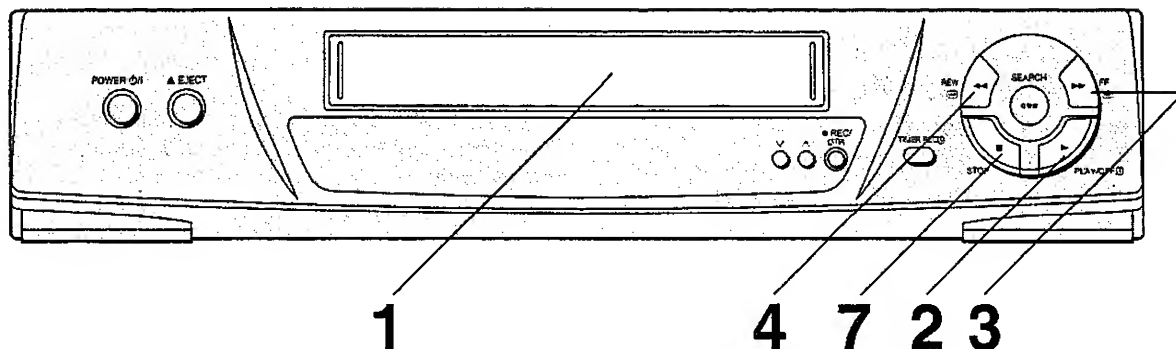


- Select **OFF** if you wish to rewind the VCR slowly.

5 Press **MENU** twice to make the on screen display disappear.



# Playback



Operations	Display Symbols
1	Insert a recorded video cassette tape.
2	Start viewing the picture.
3	Search forward by tapping <b>FF</b> . •To change back to normal playback, press <b>PLAY</b> .
4	Search backward by tapping <b>REW</b> . •To change back to normal playback, press <b>PLAY</b> .
5	View a still picture. •Press <b>PAUSE/SLOW</b> . •To continue normal playback, press <b>PLAY</b> or <b>PAUSE/SLOW</b> .
6	View a slow motion picture. •Keep <b>PAUSE/SLOW</b> pressed for 2 seconds or more. •To continue normal playback, press <b>PLAY</b> .
7	Stop viewing the picture.

Basic Operations

## Note:

If you keep **FF** or **REW** pressed in step 3 or 4, search playback is activated while the button is pressed, and operation returns to normal playback when the button is released.

## Other Playback Functions

### To Obtain a High Speed Picture During Fast Forward or Rewind

Keep ►► (FF) pressed during fast forward.

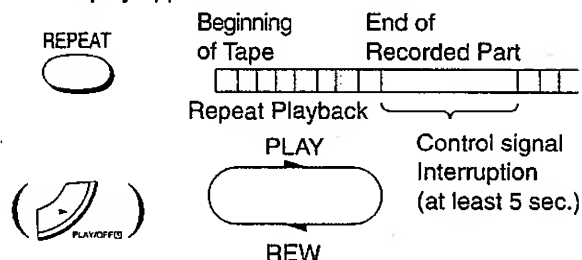
Keep ◄◄ (REW) pressed during rewind.



### To Play back the Recorded Part Repeatedly

Press **REPEAT** or keep **PLAY/OFF** [ ] ► pressed for 5 seconds or more.

The "R ►" display appears on the TV screen.



- Repeat Playback function does not work during Play-Off Timer.
- Press [ ] (STOP) to release the VCR from the Repeat Playback mode.

### To Eject the Video Cassette Using the Remote Controller

Keep pressing [ ] (STOP) for at least 3 seconds.



#### Notes:

- Select **NTSC PB SELECT** according to the video system of a tape you want to play back. See page 17.

#### When playback the NTSC tapes:

on PAL TV: The output signal is the quasi-PAL system.

4.43: The output signal is the NTSC 4.43 system.

3.58: The output signal is the NTSC 3.58 system.

#### When playback the PAL tapes:

The output signal is the PAL system regardless of position of **NTSC PB SELECT**.

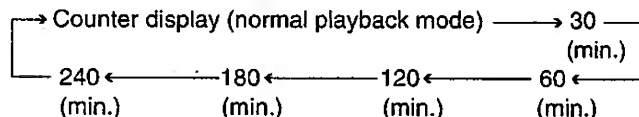
NTSC 3.58 recording requires **NTSC INPUT SELECT** to be in the AUTO or 3.58 position, however if **NTSC INPUT SELECT** is in this position when recording a NTSC 3.58 signal, no colour is available for the PAL TV. Once the recording is completed, you then need to select on **PAL TV** to view the recording in colour on PAL TV.

- Cue, review or slow playback will be automatically released after 10 minutes, and still playback, after 5 minutes.
- In Cue and Review playback, noise bars and distortions may occur on the screen. However, this is not a malfunction.
- In the LP (EP) mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VCR, it may be necessary to adjust tracking control. In some cases the picture quality may still be inferior. This is due to format constraints.
  3. Depending on the TV set used, the playback picture may roll up or down during special playback (Pause, Cue, Review, or Slow playback mode). However, this is not an indication of a malfunction.

### Play-Off Timer

Whenever you are playing back and wish to stop the tape automatically, simply set the playback duration by pressing **PLAY/OFF** [ ] ► repeatedly.

The duration indicated on the VCR display changes by pressing **PLAY/OFF** [ ] ► as follows.



Press **PLAY/OFF** [ ] ► on the VCR main unit during playback.

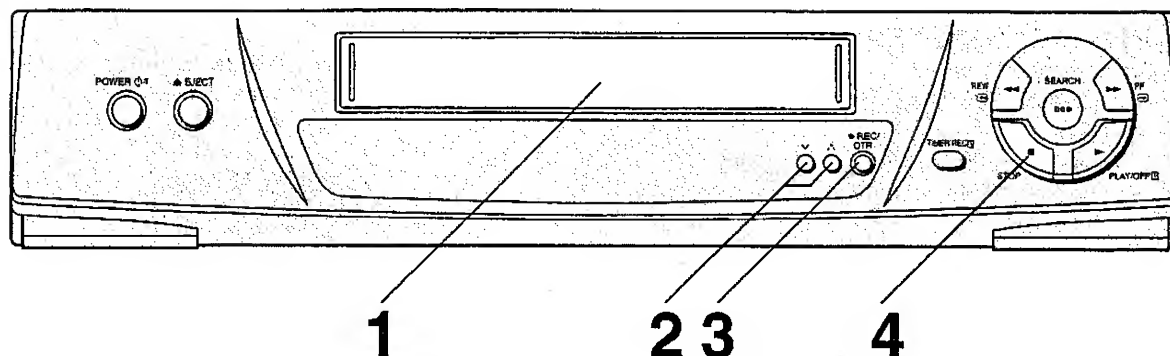





- The VCR will automatically switch off when Play-Off Timer is completed. To turn the VCR on again, press **POWER** [ ] (POWER 0/I).

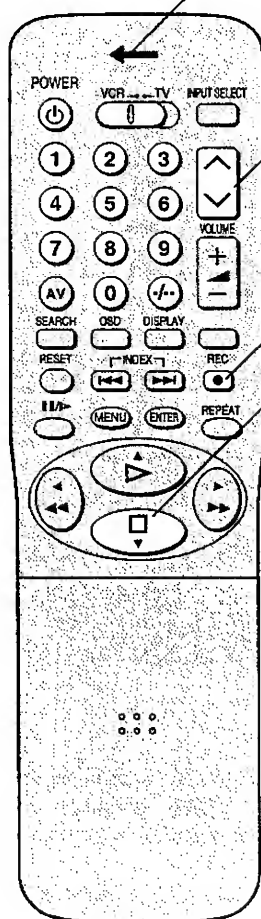
#### Notes:

- The Play-Off Timer function works during normal playback.
- When the tape reaches its end during Play-Off Timer, the tape will be rewound to the start and the VCR will turn itself off.
- To stop Play-Off Timer at any time, press [ ] (STOP) or **POWER** [ ] (POWER 0/I).
- Repeat Playback function does not work during Play-Off Timer.

# Manual Recording

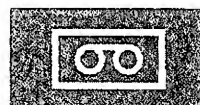
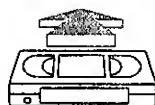


Set VCR/TV switch to VCR for using **POWER** , the  and  buttons and the **numeric buttons**.





## Operations      Display Symbols

**1**



Insert a video cassette tape with an intact erasure prevention tab.

- If it has already been inserted, press **POWER** /I (**POWER** ) to turn the VCR on.

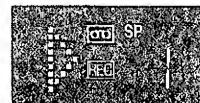
**2**



Select the TV station.

- It is also possible to select by pressing **numeric buttons**.
- Ensure that VCR/TV switch is set to VCR.

**3**



Start recording.

**4**



Stop recording.

Basic Operations

## To Select the Desired Tape Speed

Press **SPEED** before recording.

SP gives the best picture quality. LP (EP) gives the longest recording time.

- The indicator (SP, LP or EP) corresponding to the selected tape speed now appears on the VCR display or on screen display.

LP: This appears when PAL/MESECAM signals are input or output.

EP: This appears when NTSC signals are input or output.

SPEED



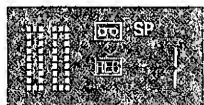
Display Symbol



## To Interrupt Recording

Press **II/▶** (PAUSE/SLOW) during recording.

Press again to continue recording.



## To Record One TV Programme while Viewing Another One

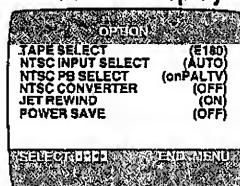
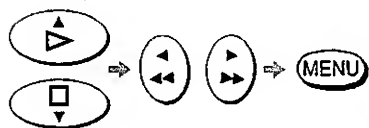
- Refer to steps 1–3 of the manual recording operation.
- Select the TV programme on your TV that you wish to view now.

- Ensure that **VCR/TV** switch is set to **TV**.

## To Display the Approximate Remaining Tape Time

- Select **TAPE SELECT** from the on screen display and select the corresponding video cassette tape length. See page 17.

On Screen Display



E180: For E30, -60, -90, -120, -150 and -180 tapes.

E195: For E195 tape.

E240: For E240 tape.

E260: For E260 and -300 tapes.

- Press **DISPLAY**.

DISPLAY

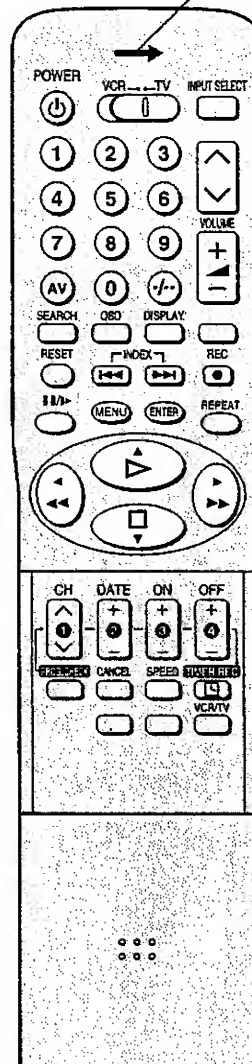


The display changes as follows each time **DISPLAY** is pressed.

→ Clock → Counter → Remaining Tape Time →

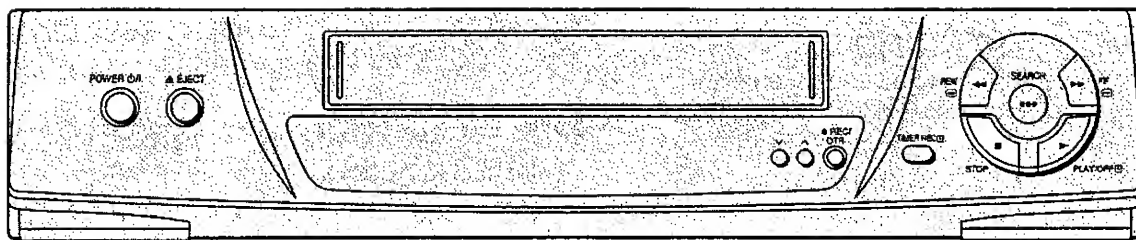
- The remaining tape time may not be displayed correctly depending on the tape used.

Set **VCR/TV** switch to **TV** for using the **▼** and **▲** buttons and the numeric buttons.



### Notes:

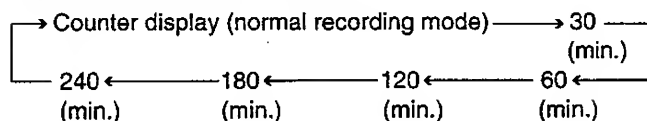
- When a video cassette with a broken off erasure prevention tab is inserted, the "OVR" indication will flash to indicate that recording is not possible even if **REC** (●) (**REC/OTR**) is pressed.
- The recording pause mode will be automatically released after 5 minutes, and the VCR will return to the stop mode.



## One-Touch Recording (OTR)

Whenever you are in a hurry to start a timer recording with automatic stop in your absence, simply set the recording duration by pressing **● REC/OTR** repeatedly.

The duration indicated on the VCR display changes by pressing **● REC/OTR** as follows:



### Preparation

Insert a video cassette with an intact erasure prevention tab.

### Operations

- 1 Ready the video source which is to be recorded, and start recording.

- 2 Press **● REC/OTR** on the VCR main unit repeatedly to select the desired recording duration.



- The VCR will automatically switch off when OTR is completed. To turn the VCR on again, press **POWER** .

#### Notes:

- The OTR function works during normal recording.
- When the tape reaches its end during OTR, the VCR will turn itself off.
- To stop OTR at any time, press **STOP** or **POWER** .

# Timer Recording

## 4-Key Programming

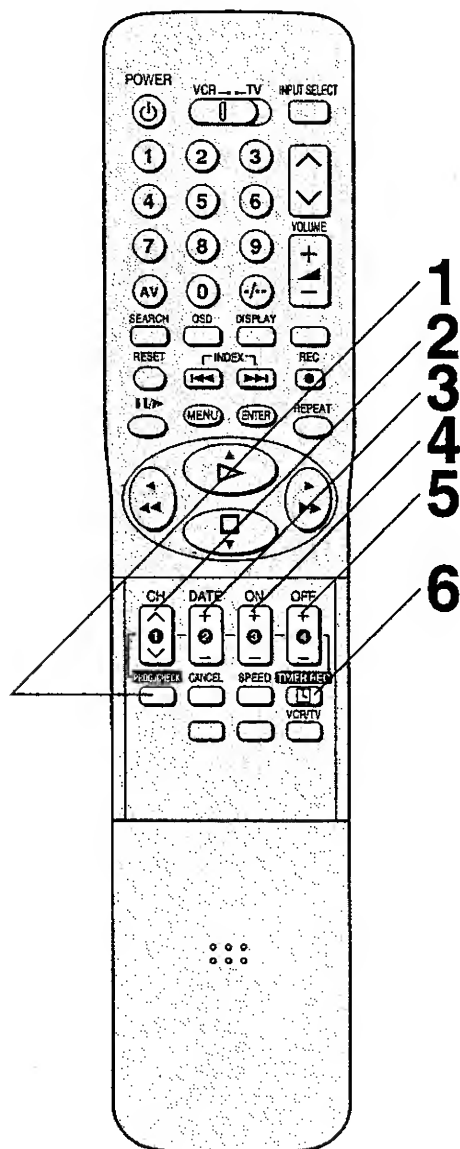
Up to 8 timer programmes, including weekly and daily programmes, can be recorded up to one month in advance by setting the timer.

### Preparations

- Insert a video cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.
- Check that the clock is set to the correct time. If it has not been set, refer to page 15.

### Example:

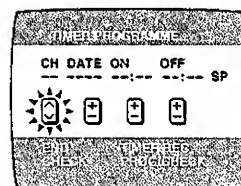
Programme position (channel); 2  
Date; 27 October  
Starting time; 20:02  
Ending time; 21:30  
(Present date; 16 October)



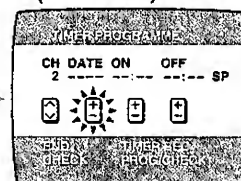
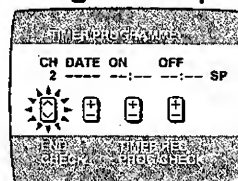
### Operations

### On Screen Display

- 1 Press the **PROG./CHECK** button.

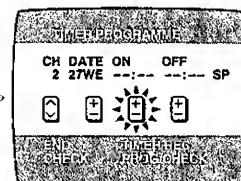
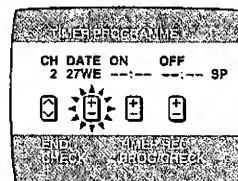


- 2 Set **Programme position** (channel) to "2".

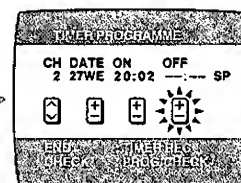
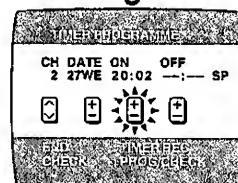


- The next item will flash after about 2 seconds.

- 3 Set **Date** to "27WE".

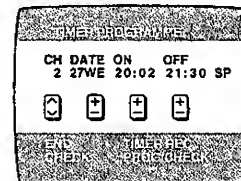


- 4 Set **Starting time** to "20:02".



- When kept pressed, the indication changes in 30-minute steps.

- 5 Set **Ending time** to "21:30".



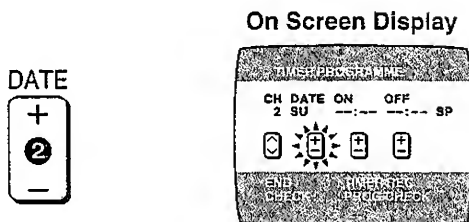
- 6 **TIMER REC** To activate timer recording, press **TIMER REC**

- The "PROGRAMME IS COMPLETE." message appears.
- The VCR will be set to the timer recording standby mode after about 1 minute if **TIMER REC** is not pressed.



## Weekly Timer Recording

In step 3, select the desired day by pressing **DATE** —.  
For example, SU (Sunday)

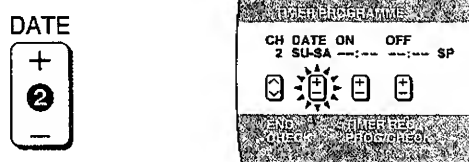


(SU=Sunday, MO=Monday, TU=Tuesday, WE=Wednesday, TH=Thursday, FR=Friday, SA=Saturday)

## Daily Timer Recording

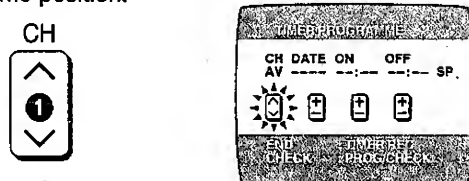
For this timer function, several groups of days can be selected.

- Ⓐ Daily recording from Monday to Friday (MO–FR)
  - Ⓑ Daily recording from Monday to Saturday (MO–SA)
  - Ⓒ Daily recording from Sunday to Saturday (SU–SA)
- In step 3, select the desired days by pressing **DATE** —.  
For example, Ⓒ



## Timer Recording from an External Signal Source

If timer recording is performed by a unit connected to the audio/video input sockets, select the AV indicator in step 2 for the programme position.

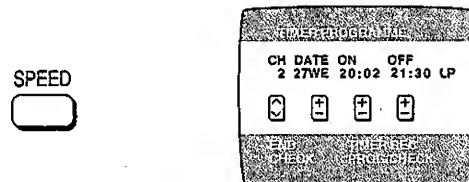


## Setting other Programmes in Succession

Repeat steps 1–6.

## Selecting the Desired Tape Speed

Press **SPEED** to make the selection in any of steps 1–5.



## Checking a Timer Programme

- The VCR must be turned on, or the timer recording indicator "⏏" lit.
- Confirm that the TV is on and the VCR viewing channel is selected.

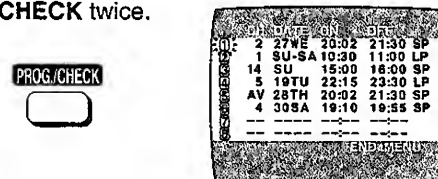
Press **PROG./CHECK** twice.



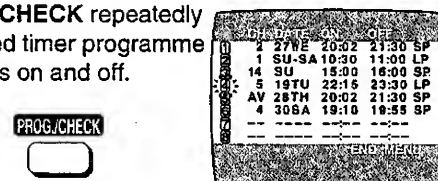
## Cancelling a Timer Programme

- The VCR must be turned on, or in timer recording standby mode.
- Confirm that the TV is on and the VCR viewing channel is selected.

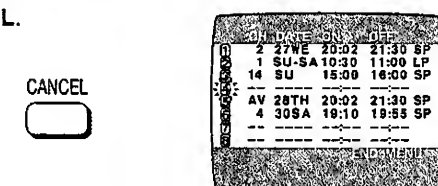
1 Press **PROG./CHECK** twice.



2 Press **PROG./CHECK** repeatedly until the desired timer programme number flashes on and off.



3 Press **CANCEL**.



### Note:

If timer recording is not completed (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 A.M. two days later.

However, if, at that time, the timer recording function is activated, the programmed timer recording data will be cancelled at 4 A.M. the next day.

# Search Functions

## To Find the Beginning of Each Recording (VHS Index Search System)

### Example:


Searching for the 2nd recorded segment in the forward direction.

Press **INDEX**  twice.

(This operation is performed while the VCR is in the stop mode or normal playback mode.)


### Display Symbol



- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX** .
- Up to 20 index signals can be searched for in both directions.
- When the opposite **INDEX** button is pressed, the number will decrease to 1.
- The figure on the display decreases by 1 each time an index signal is located.

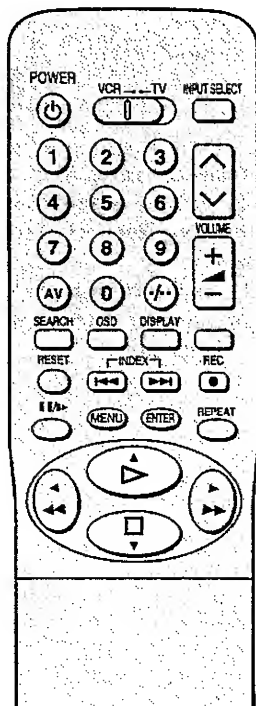
### Recording Index Signals

Index signals are recorded in the following cases.

- When a recording is started by pressing **REC**  (**REC/OTR**).
- When timer recording is activated.

### Note:

The index search function can only work correctly if the index signals are spaced at least 5 minutes.



## Searching while checking the video cassette contents (Intro-Jet Scan)

The approximate beginnings of each recorded programme are played in succession at the high speed so that the programme to be viewed can be located easily.

### Preparations

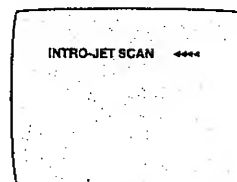
- Confirm that the TV is on and the VCR viewing channel is selected.
- Load the pre-recorded video cassette.

### 1 Press **SEARCH**.

(This operation is performed while the VCR is OFF or while the VCR is in the stop mode or normal playback mode with the VCR ON.)

### On Screen Display

**SEARCH**




- The tape is rewound to the start, and played for about 10 seconds at the high speed. It is then fast forwarded, the VISS (VHS Index Search System) signals are searched in succession, and each time the signals are found, the tape is played for about 10 seconds at the high speed.

### 2 When the programme to be viewed is reached, press (**PLAY**).



- Normal playback now commences.

### To stop the operation at any time

Press  (**STOP**).



### Note:

This function may not work properly when recorded programmes run for 15 minutes or less.

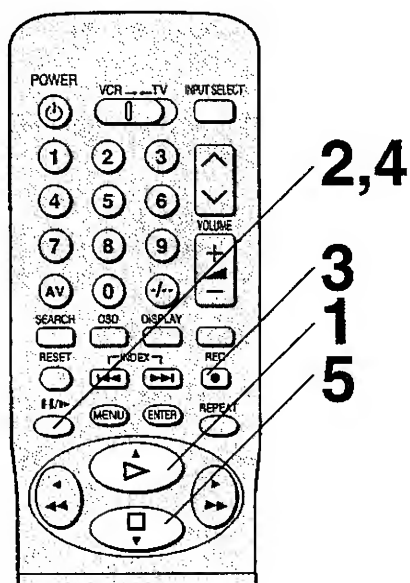
# Making a copy

## Copying

This function can be used to make up an edited tape from other recordings or video sources.  
A new scene can be added to the end of previous one.

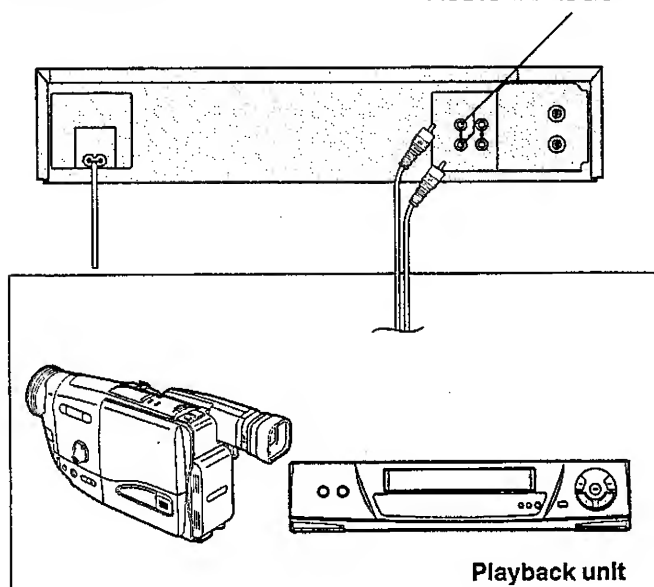
### Preparations

- Connect a movie camera or another VCR to this VCR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the audio source required by pressing **INPUT SELECT** to set AV.



Recording VCR

AUDIO IN/VIDEO IN



Playback unit

## Operations

- 1 Search for the end of the previous recording.



- 2 Press **II/▶** (PAUSE/SLOW).



- 3 Press **REC ●** to switch the VCR from the pause mode to the recording standby mode.



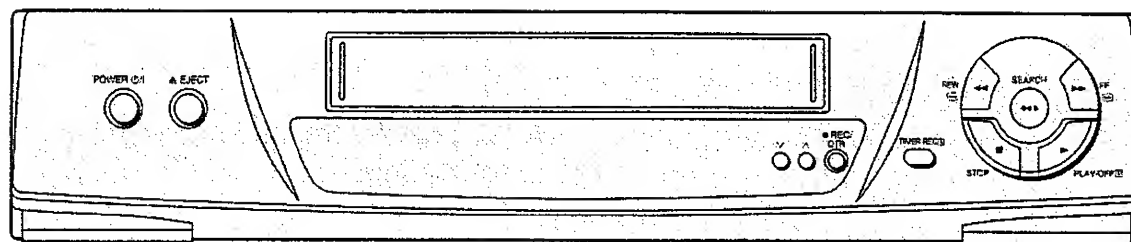
- 4 Start the new recording by pressing **II/▶** (PAUSE/SLOW) again.



- 5 Press **□** (STOP) to stop recording.



## Other Functions



### NTSC Playback

Tapes recorded in the NTSC system can be played back with this VCR via a PAL system TV.

- Select **NTSC PB SELECT** from the on screen display according to the colour TV system of the TV. (See page 17.)
  - on PAL TV: For TVs that can receive PAL signals.
  - 4.43: For TVs that can receive NTSC 4.43 signals.
  - 3.58: For TVs that can receive NTSC 3.58 signals.

#### Note:

On some TVs, the playback picture may roll up or down; adjust this using the V-HOLD control on the TV. TVs not equipped with a V-HOLD control cannot correct this condition. The playback picture may shrink vertically, and black bars may appear both on the top and bottom of the screen. This does not indicate a malfunction.

- During cue, review, still or slow playback, the picture may not be in colour. Alternatively, the top of the TV screen may be distorted.

#### Note for only NTSC Playback on PAL system TV

This function is designed to allow only the playback of tapes recorded by NTSC signals on a PAL system TV. The NTSC signal is not completely converted to a PAL signal. For this reason, images played back by this function cannot be recorded correctly on other VCRs.

### Other Automatic Functions

#### Automatic Playback

When a video cassette without an erasure prevention tab is inserted, the VCR starts playback automatically.

#### VCR-off Playback

When the VCR is off, an inserted video cassette can be played back by pressing **PLAY/OFF** [▶].

#### Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

During OTR, this function will not work.

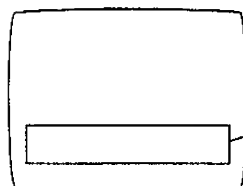
#### Automatic Switching Off and Ejection

When the VCR is switched off, an inserted video cassette can be ejected by simply pressing **EJECT**. The VCR will eject the video cassette and automatically turn itself off again.

# Before Requesting Service

Before requesting service, check the following points again.

## Message of On Screen Display



On screen display messages are displayed.

The error message is indicated in brackets [ ].

[PLEASE PUT IN A VIDEO CASSETTE.]

- ☞ **● REC/OTR (REC ●)** or **TIMER REC □** has been pressed without a video cassette inserted. Insert a video cassette with an intact erasure prevention tab.

[PLEASE STOP THE TAPE.]

- ☞ **TUNER PRESET** has been selected during playback. Stop the tape.

[PLEASE SET THE CLOCK.]

- ☞ **TIMER REC □** or **PROG./CHECK** has been pressed when the clock is not set. Set the clock.

[PLEASE USE A CASSETTE WITH TAB.]

- ☞ **● REC/OTR (REC ●)** or **TIMER REC □** has been pressed without a video cassette with an intact erasure prevention tab. Use a video cassette with an intact erasure prevention tab.

[NO TIMER RECORDING HAS BEEN SET.]

- ☞ **TIMER REC □** has been pressed with no timer programmes. Set timer recording.

[VCR IS IN THE TIMER STANDBY MODE.]

- ☞ **POWER ⏻/⏻ (POWER ⏻)** has been pressed during the timer standby mode. Press **TIMER REC □** to release the VCR from the timer standby mode.

## Self-diagnostic Indications

This VCR has a self-diagnosis and display function. If the VCR detects trouble during installation or during use, the following indications automatically appear in the VCR display. Indications are in the form of a single English letter plus two numbers, such as [H01].

**INDICATION:** U10  
**CAUSE:** Dew has formed.  
**REMEDY:** Wait until the indication disappears.

**INDICATION:** H□□, F□□  
**CAUSE:** Some trouble has occurred. (Numbers after H and F differ according to the status of the VCR.)  
**REMEDY:** Consult Panasonic Customer Care Center for advice on 132600.

## The VCR will not operate correctly

The symptom description is indicated in quotations “ ”.

“The VCR display is not illuminated.”

- ☞ The mains lead has not been connected. Connect the mains lead to the VCR.

“The VCR display is illuminated but the VCR will not operate.”

- ☞ The VCR is in the timer mode. Press **TIMER REC □** to operate the VCR manually.
- ☞ Safety devices are operating. Disconnect the mains lead and wait for 1 minute. Reconnect the mains supply and check functions.
- ☞ Dew may have formed. When the dew indicator flashes, wait until this indicator disappears.

“An unknown language appears on the TV screen.”

- ☞ The language setting has been set to an unknown language. Select the desired language. See page 14.

## Playback will not operate correctly


The symptom description is indicated in quotations “ ”.

“The picture is noisy or is not in colour. Horizontal bars or lines run down the screen.”

- ☞ Tracking is not correct. Adjust the tracking. See page 5.
- ☞ The TV has not been tuned to the VCR. Tune the TV to the VCR. See page 10.
- ☞ The video heads are clogged or worn. Consult Panasonic Customer Care Center for advice on 132600.

## Recording will not operate correctly

The symptom description is indicated in quotations " ".


"The "  " indication flashes whenever recording is attempted."

- ☞ The erasure prevention tab on the video cassette has been broken off.  
Use a tape with an intact erasure prevention tab, or cover the tab hole with adhesive tape, if the original recording is no longer required.

"The picture is recorded with noise or a blank screen."

- ☞ The aerial or aerial lead is defective.  
Check the aerial connection to the VCR. See page 9.  
Check your normal TV picture. If there is no picture, check your aerial.
- ☞ The VCR is not correctly tuned.  
Retune the VCR. See pages 12-13.
- ☞ AV has been selected.  
Select the required TV programme.

"Timer recording cannot be performed."

- ☞ The clock or calendar has been incorrectly set.  
Check the clock and calendar. Set them to the present time. (Note that this is a 24-hour clock.)  
See page 15.
- ☞ The recording starting or ending time setting is incorrect.  
Set the recording starting and ending time correctly.
- ☞ The VCR has not been set for timer recording.  
Press **TIMER REC**  after programming for timer recording.

"AV external recordings cannot be made."

- ☞ AV has not been selected.  
Select AV by pressing **INPUT SELECT**.
- ☞ External AV connections are incorrect.  
Check that the connections for external video and audio sources are correct. See page 27.

## The remote controller will not operate correctly

The symptom description is indicated in quotations " ".

"The remote controller does not operate correctly."

- ☞ The remote controller transmitter beam is not reaching the VCR.  
Ensure that the remote controller is being pointed at the VCR and that the transmitter beam is not obstructed.
- ☞ The distance is too far.  
Use the remote controller within 7 m of the VCR.  
If this range is not possible, replace the batteries.
- ☞ The batteries are exhausted.  
Replace the batteries. Note the precautions for replacement on page 8.
- ☞ The batteries are incorrectly fitted with (+/-) reversed.  
Fit the batteries correctly as shown on page 8.

# Usage Precautions

Please read these precautions before you operate this VCR.

## Avoid Sudden Changes in Temperature

If the VCR is suddenly moved from a cold to a warm place, dew may form on the tape and inside the VCR. In this case, the "d" dew indicator will flash on and off and the VCR will not operate.

## Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

## Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increases in temperature. Do not block or cover these holes. Avoid covering the holes with soft materials such as cloth or paper.

## Avoid High Temperature

Keep the VCR away from extreme heat sources such as direct sunlight, heating radiators, or closed automobiles.

## Avoid Magnets or Magnetized objects

Never bring a magnet or magnetized object near the VCR as it will adversely affect its performance of the VCR. Keep the VCR away from other equipments as much as possible when using it, avoid any adverse effect on performance for both the VCR and the equipment.

## Do Not Place Fingers or Other Objects Inside

Do not attempt to disassemble the VCR. Touching internal parts of this VCR is dangerous, and may cause it serious damage. There are no user serviceable parts inside.

## Avoid Water

Keep the VCR away from flower vases, tubs, sinks, etc. If liquids are spilled into the VCR, serious damage could occur. If you spill any liquid into the VCR, consult qualified service personnel.

## Lightning

To avoid damage by lightning, disconnect the aerial plug from the VCR.

## Cleaning the VCR

Wipe the VCR with a clean, dry cloth. Never use cleaning fluid or other chemicals. Do not use compressed air to remove any dust.

## Stacking

Place the VCR in a horizontal position, and do not place anything heavy on it.

## If Dew Forms in the VCR

Dew may form in the VCR if:

- The VCR is in a room where the heater has just been turned on.
- The VCR is in a room with steam or high humidity.
- The VCR is brought from cold surroundings into a well-heated room.
- The VCR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VCR, the "d" dew indicator on the display flashes on and off (The self test indicator "U10" will also appear in the VCR display.) and all the function buttons are made non-operational to protect the tape and the video heads. When the dew indicator flashes, wait until this indicator disappears.

- If dew forms inside the VCR while the VCR is off, it will turn on automatically and the dew indicator will flash on and off. As soon as the dew disappears, the VCR will turn itself off again.

## Dirt on the video heads

If the video heads get dirty, pictures will not be recorded or played back clearly.

(See the following conditions.)

Normal picture



Small amount of dirt



Large amount of dirt



If this happens, clean the video heads with a commercially available cleaning cassette.

If the problem still persists after performing above, contact a service personnel to request assistance.

**Head cleaning by service agents is not covered by warranty.**



# Specifications

## NV-SD230A

**Power Source:** 220-240 V AC 50/60Hz  
**Power Consumption:** 17 Watts

**Video Recording System:** 2 rotary heads, helical scanning system  
**Video Heads:** 2 heads  
**Tape Speed:** PAL SP; 23.39 mm/sec. LP; 11.7 mm/sec.  
NTSC SP; 33.3 mm/sec. EP; 11.1 mm/sec.  
**Tape Format:** VHS tape  
**Record/Playback Time:** PAL SP; 240 min. with NV-E240  
PAL LP; 480 min. with NV-E240  
**FF/REW Time:** Approx. 60 sec. with NV-E180

## VIDEO

**Television System:** CCIR; 625 lines, 50 fields, PAL colour signal  
EIA; 525 lines, 60 fields, NTSC colour signal  
**Modulation System:** Luminance; FM azimuth recording  
Colour signal; converted subcarrier phase shift recording  
**Input Level:** VIDEO IN (PHONO); 1.0 Vp-p, 75 ohm, terminated  
**Output Level:** VIDEO OUT (PHONO); 1.0 Vp-p, 75 ohm, terminated  
RF modulated;  
UHF channel AU28-69, 75 ohm

## AUDIO

**Input Level:** AUDIO IN (PHONO); -6 dBV, more than 47 kohm  
**Output Level:** AUDIO OUT (PHONO); -6 dBV, less than 1 kohm  
**Audio Track:** 1 track (normal-mono only)

**Video Horizontal Resolution:** Colour; more than 240 lines (SP)  
**Signal-to-Noise Ratio:** Video; more than 43 dB (SP)  
**Audio Frequency Response:** 80 Hz-8 kHz  
**Operating Temperature:** 5°C-40°C  
**Operating Humidity:** 35%-80%  
**Weight:** 3.9 kg  
**Dimensions:** 430 (W)×87 (H)×297 (D) mm  
**Standard Accessories:** 1 pc. RF coaxial cable  
1 pc. remote controller  
2 pcs. "R6" size batteries  
1 pc. AC mains lead

Weight and dimensions shown are approximate.  
Specifications are subject to change without notice.

**Matsushita Electric Industrial Co., Ltd.**  
Central P.O.Box 288, Osaka 530-91, Japan